5. Analyzing Community Impacts

Guidelines

What should be considered when analyzing community impacts?

After the transportation alternatives and a preliminary community profile have been defined, the analyst examines the relationship between the proposed transportation action and community life. This task involves both the identification and investigation of impacts. Analysts examine the anticipated future with the transportation action in comparison to the anticipated future without the transportation action (a no-build alternative or baseline). When analyzing impacts, it is important to keep in mind the following guidelines:

- Be cognizant of both positive and negative impacts.
- Consider both temporary and long-term impacts as well as secondary and cumulative effects.
- Keep community goals in mind when identifying impacts.
- Recognize the public's perception of impacts. If the public identifies issues, then review and research these particular issues.
- Focus on the magnitude of an issue or controversy, as it determines the level of specificity the analyst must adopt.

Types of Impacts

What are some of the impacts to be assessed?

The following table includes examples of the types of impacts that might be identified and analyzed. The inquiries under the impact categories highlight some of the relevant questions to answer to understand how the proposed action affects the community. This is an iterative process. Analysts will need to return to the community profile to obtain detailed information about the proposed project and to collect additional data

What questions help identify community impacts?

about the community in order to answer the questions posed. The questions in this table should lead to others based on the specific circumstances of the project.

Impact Category		
Social and Psychological Aspects	**Physical Aspects**	**Land Use**
Changes in Population Will the project cause redistribution of the population or an influx or loss of population?	**Barrier Effect** Is a wall or barrier effect created (such as from noise walls or fencing)?	**Land-Use Patterns** Will there be loss of farmland? Does it open new areas for development? Will it induce changes in land use and density? What changes might be expected?
Community Cohesion and Interaction How will the project affect interaction among persons and groups? How will it change social relationships and patterns?	**Sounds** Will noise or vibration increase?	**Compatibility with Plans** Is the project consistent with local land-use plans and zoning?
Isolation Will certain people be separated or set apart from others?	**Other Physical Intrusions** Will dust or odor increase? Will there be a shadowing effect on property?	
Social Values Will the project cause a change in social values?	**Visual Environment**	
Quality of Life What is the perceived impact on quality of life?	**Aesthetics** Will the community's aesthetic character be changed?	
	Compatibility with Goals Is the design of the project compatible with community goals? Has aesthetics surfaced as a community concern?	

Impact Category

Economic Conditions

Business and Employment Impacts
Will the proposed action encourage businesses to move to the area, relocate to other locations within the area, close, or move outside the area? What is the impact on both the region and individual communities?

Short-term Impacts
How is the local economy affected by construction activities? Are there both positive (jobs generated) and negative (detours and loss of access) impacts?

Economic Conditions (Continued)

Business Visibility
Will the proposed action alter business visibility to traffic-based businesses? How will visibility and access changes alter business activity?

Tax Base
What is the effect on the tax base (from taxable property removed from base, changes in property values, changes in business activity)?

Property Values
What is the likely effect on property values caused by relocations or change in land use?

Mobility and Access

Pedestrian and Bicycle Access
How does the project affect non-motorist access to businesses, public services, schools, and other facilities? Does the project impede or enhance access between residences and community facilities and businesses? Does it shift traffic?

Public Transportation
How does the project affect access to public transportation?

Vehicular Access
How does the project affect short- and long-term vehicular access to businesses, public services, and other facilities? Does it affect parking availability?

What questions help identify community impacts?

Impact Category

Provision of Public Services

Use of Public Facilities
Will the proposed action lead to or help alleviate overcrowding of public facilities (i.e., schools and recreation facilities)? Will it lead to or help alleviate underuse? How will it affect the ability to provide adequate services?

Displacement of Public Facilities
Will the project result in relocation or displacement of public facilities or community centers (e.g., places of worship)?

Safety

Pedestrian and Bicycle Safety
Will the proposed action increase or decrease the likelihood of accidents for non-motorists?

Crime
Will the proposed action increase or decrease crime?

Emergency Response
Will there be changes in emergency response time (fire, police, and emergency medical)?

Displacement

Effect on Neighborhoods
What are the effects on the neighborhood from which people move and into which people are relocated?

Displacement (Continued)

Residential Displacements
How many residences will be displaced? What type(s)—multi-unit homes, single family, rural residential, others? Are there residents with special needs (disabled, minority, elderly residents)?

Business and Farm Displacements
How many businesses and farms will be displaced? What type(s)? Do they have unique characteristics, such as specialty products or a unique customer base?

Relocation Sites
Are there available sites to accommodate those displaced?

Environmental Justice (Title VI/ NEPA)

Crosscutting all these issues is the concern for nondiscrimination. Analysts should identify who benefits and who is adversely affected by the project, noting impacts on specific subgroups. The NEPA process and this guide should be used to address environmental justice issues and prevent the potential for discrimination and disproportionately high and adverse effects on specific populations.

Title VI of the Civil Rights Act of 1964 and related statutes assure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination on the basis of:

Race	Age
Color	Sex
National Origin	Disability
	Religion

Executive Order 12898 on Environmental Justice directs that programs, policies, and activities not have a disproportionately high and adverse human health and environmental effect on minority and low-income populations.

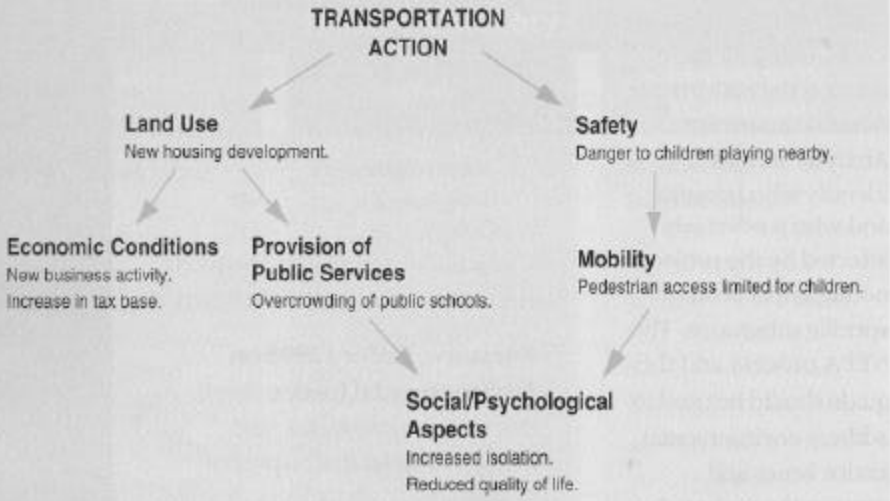
Relationships Among Impacts

How do these effects relate to each other?

It is important for analysts to recognize the interconnections between community impacts. Analysts should not limit themselves to the previous list of questions. Instead, they should examine how differing impacts relate to each other, noting direct and indirect impacts as well as the cumulative or counterbalancing impacts of various effects.

Indirect impacts are those caused by direct impacts, and often occur later in time or further away in distance than direct project impacts. Cumulative impacts result from the incremental impacts of an action added to other past, present, or reasonably foreseeable future actions.

Example: Relationship of Impacts



A proposed project may result in changes in land use, such as an increase in housing development or commercial space in certain locations. As a result, enhanced business activity along the corridor may increase the local tax base and create jobs; however, population growth might put additional pressure on public services, leading to overcrowding at public facilities.

The project might create safety problems if children now must cross a wider highway to reach parks or schools, leading to increased reliance on school buses and private vehicles. Overcrowded schools and reduced mobility might create other social problems.

The following section of this guide describes some of the tools and approaches that may be used to analyze impacts.

6. Selecting Analysis Tools

Basic Approaches

What approaches might be used?

A number of approaches are available to identify and investigate project impacts. The following are basic frameworks that analysts might consider:

Comprehensive approach—gain as much relevant data as possible, examine, and then reach a conclusion.

Incremental approach—build on information a bit at a time until you reach a conclusion.

Comparative approach—identify similarities and differences from past experience.

In all cases, the process of examining relationships between a proposed action and a community involves making projections about *the future with the project* in comparison to *the future without the project.*

Analytical Aspects

What dimensions should be analyzed?

When analyzing specific impacts, the analyst should broadly examine:

Likelihood of impact

Scale, severity, and extent of impact

Duration of impact over time

Reversibility of impacts

Direct and indirect (secondary) impacts

Cumulative or counterbalancing impacts

Techniques

There are a variety of techniques available to examine the effects of a project on a community. The following is a sample of relevant techniques or tools:

Statistical Analysis—forecasting, trendline projections, and correlation

Comparisons—case studies of similar transportation actions in other locations, using analogies, and examining similarities and differences over time or across areas

Visual Imaging—computer simulations and development of physical models

Mapping Overlays—plotting various maps (physical characteristics, demographics, and project alternatives) and superimposing them to create a composite image

Expert Consultation—roundtables, discussions, and reports

Peer Review—consultation with professionals within the transportation field

Brainstorming—generating ideas through quick-response reactions

Delphi Techniques—structured form of reaching consensus among experts for problemsolving

Market Research—focus groups, targeted surveys, interviews, and questionnaires

Public Meetings—workshops and citizen advisory groups

Public Involvement can help the analyst identify potential impacts of concern to the community, and determine their severity, extent, and importance. Several of the above techniques involve public participation.

Sample Techniques to Determine the Extent of an Access Problem

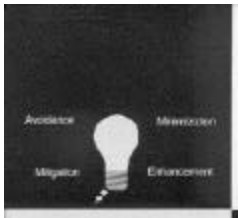
If a potential barrier is identified, the magnitude of the problem might be assessed through several techniques.

Use overlays to superimpose maps of the proposed project, community facilities (e.g., schools), businesses, and the location of patrons. This approach will identify where the project might cut off a pedestrian/bicycle access route and helps determine the number of households where access is restricted.

Use market research to identify how dependent the users are on current patterns of access (whether alternative services are accessible, whether individuals rely on walking/public transit, etc.).

Perform comparisons with other areas that have experienced similar road development.

Use public involvement to identify the degree of public concern and perceptions of barriers within the community.



7. Identifying Solutions

Addressing Impacts

How can adverse impacts be addressed?

When adverse impacts are identified, analysts should identify potential methods to address them. This step in the community impact assessment process involves problem-solving and generating solutions. There are four primary methods for dealing with impacts, which should be considered in order. The thought-process involves the following steps as seen in the graphic on the left.

AVOIDANCE
Alter the project so an impact does not occur.

MINIMIZATION
Modify the project to reduce the severity of an impact.

MITIGATION
Undertake an action to alleviate or offset an impact or to replace an appropriated resource.

ENHANCEMENT
Add a desirable or attractive feature to the project to make it fit more harmoniously into the community. (Not designed to replace lost resources or alleviate impacts caused by the project.)

Project design options are typically based on an ideal engineering standard. When adverse community impacts are identified, analysts should:

- Work with the project development team to identify design or engineering options to deal with these impacts—starting with avoidance, and then moving on to minimization and mitigation techniques.
- Finally, consider enhancement opportunities which are a reasonable expenditure of public funds and help the project fit harmoniously into the community.

Community impact analysts should recognize that an effort to address one impact may create other adverse impacts. They should consider the potential impacts of these measures on the community, making sure that approaches support the purpose and need of the project. Whatever approach is selected, it is important to monitor and follow through on commitments.